2012

Trout Brook Study

Trout Brook Study

Eco 6

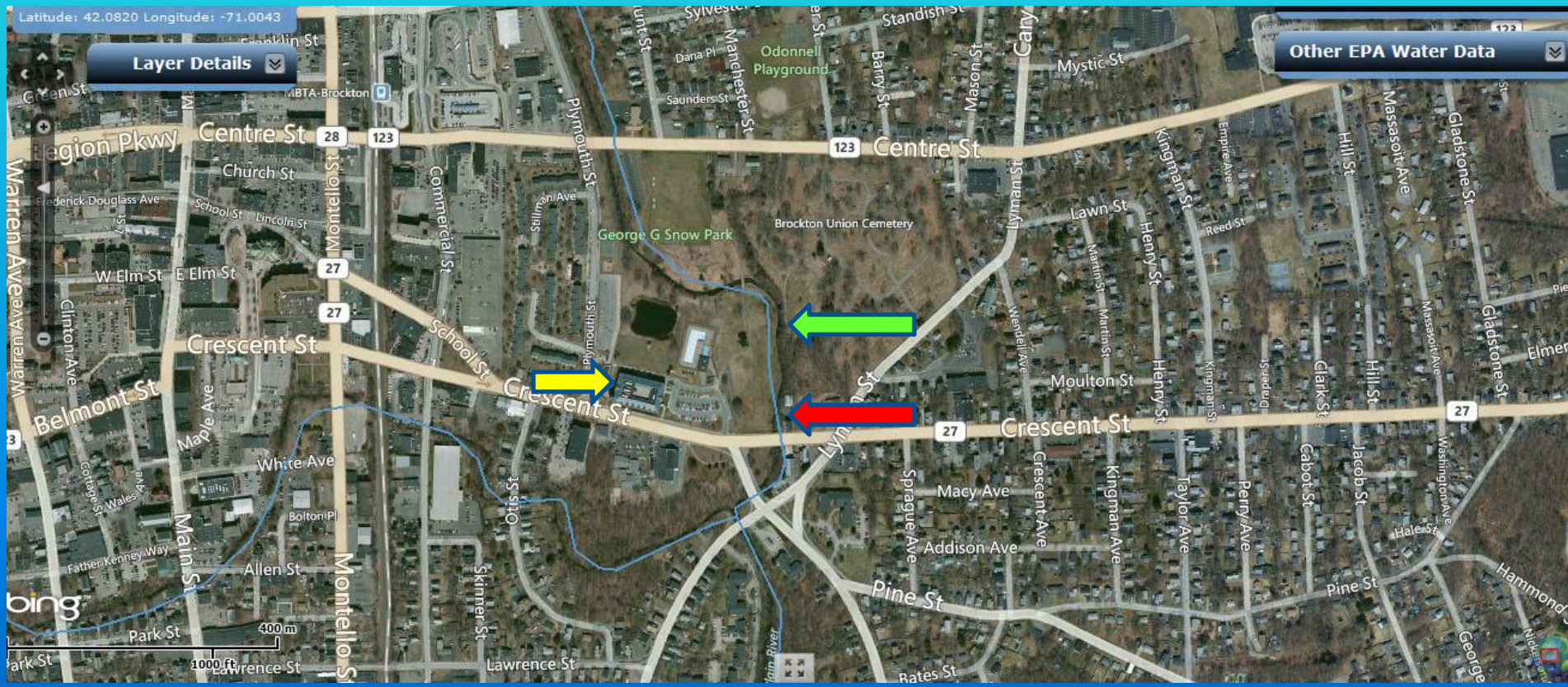
Presenters: Simon Schultz, Hadassa Sossou, and Shane Swanton

Purpose of Study

- The purpose of our study was to investigate the water quality of Trout Brook through collection and identification of macroinvertebrates.

- We also wanted to determine if 2 sites in Trout Brook with different bottom substrates contained different types and amounts of macroinvertebrates.

Trout Brook
Brockton, MA



Map from www.watersgeo.epa.gov

Taunton Watershed

- 43 Towns
- 2nd largest in MA
- 500,000 people

Image from www.savethetaunton.org

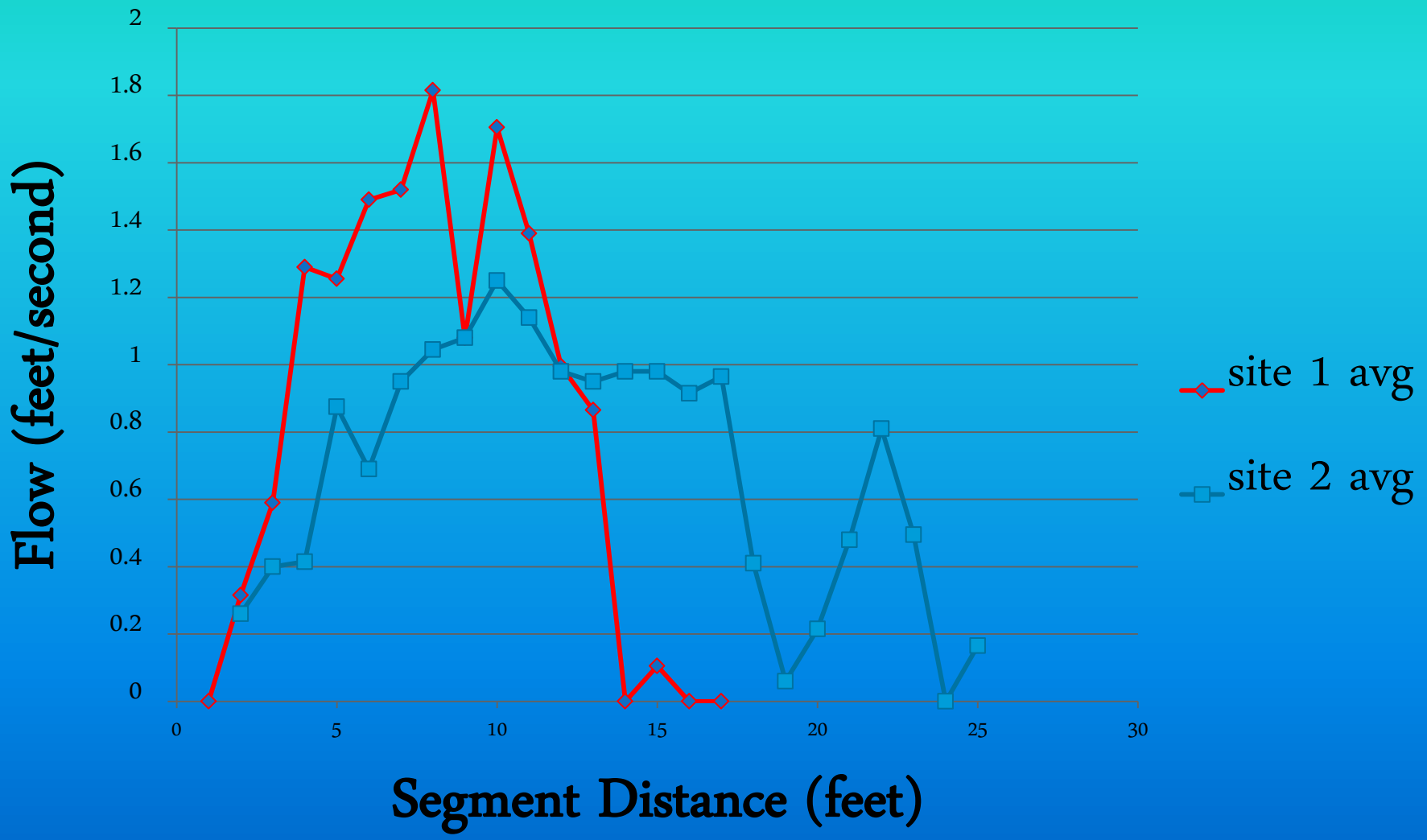
Trout Brook
Site 1

- Near busy road
- Rocky and sandy bottom
- Steep west bank

Trout Brook
Site 2

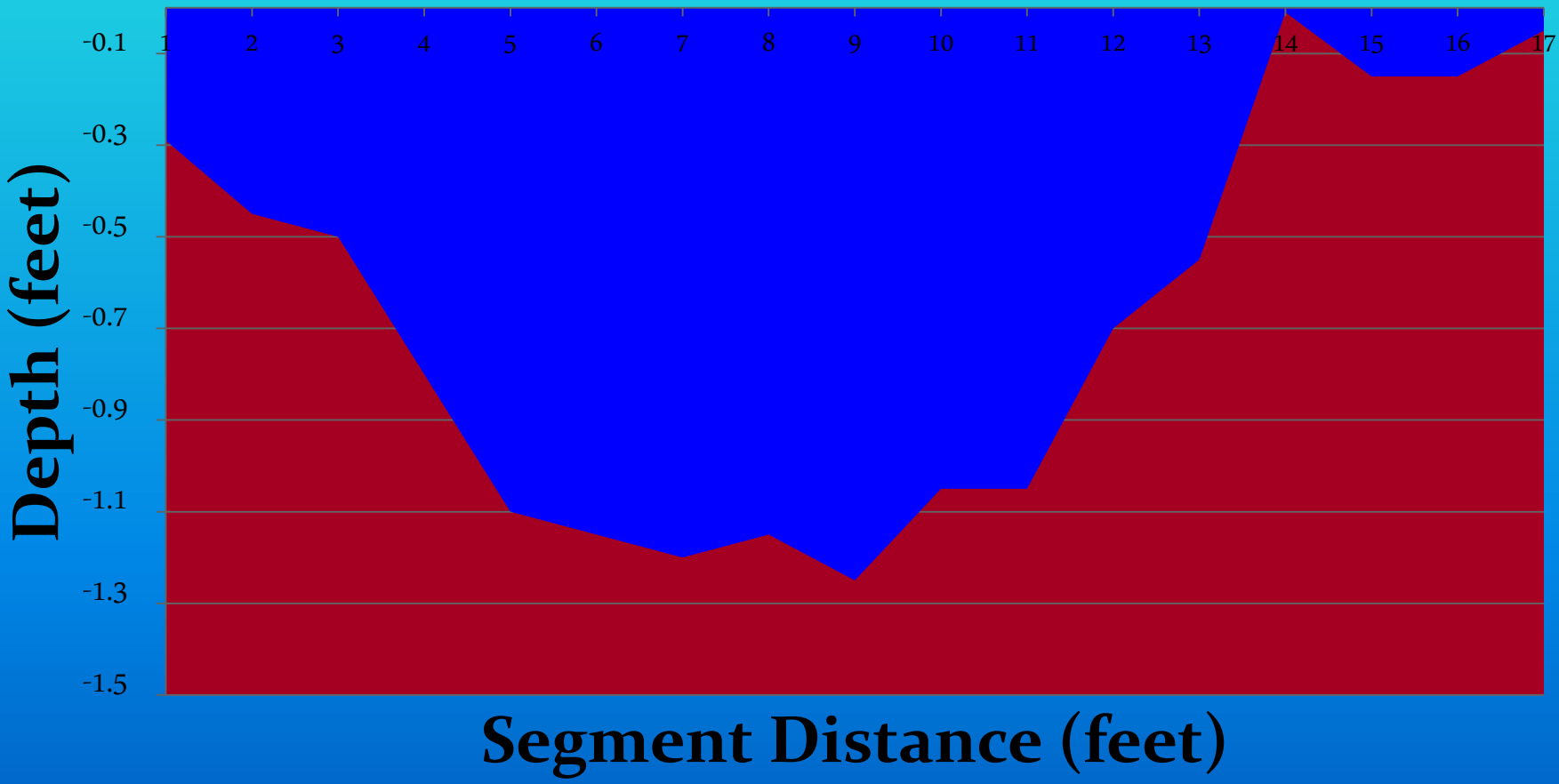
- Sand and mud bottom
- Similar riparian zone
- 40-50% plant cover
- Slightly wider

Trout Brook Flow Rate



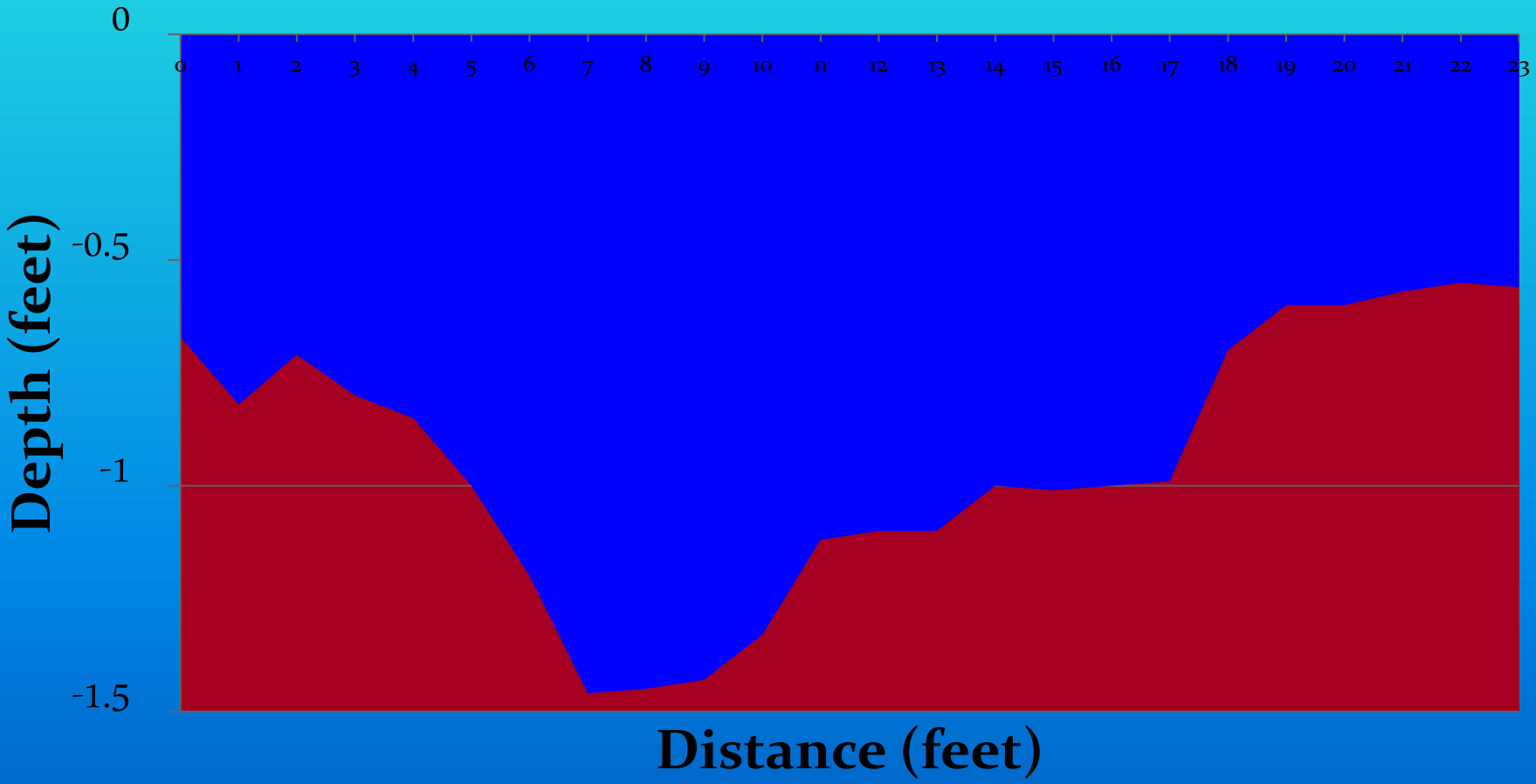
Trout Brook Site 1

Depth Profile



Trout Brook Site 2

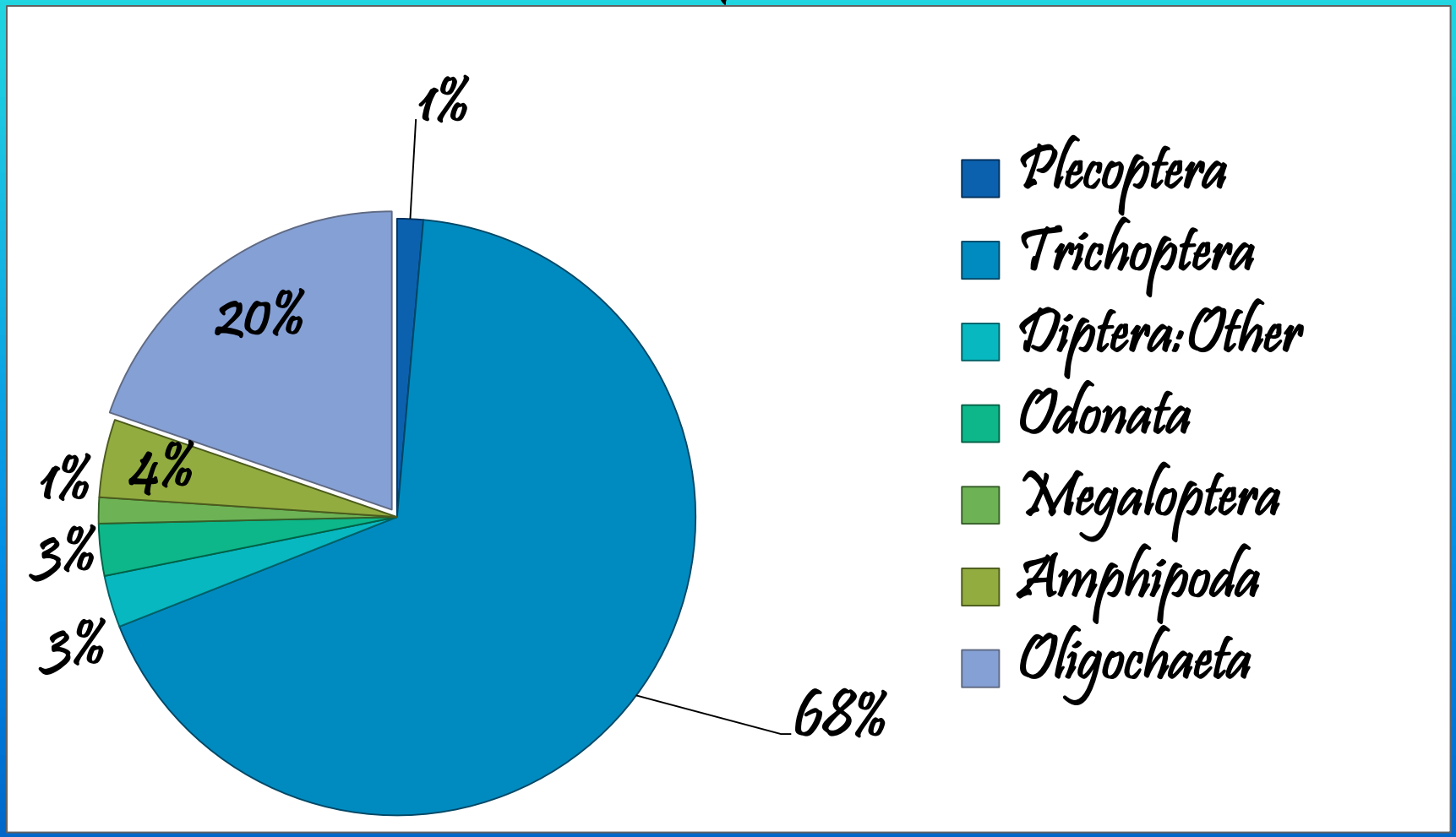
Depth Profile



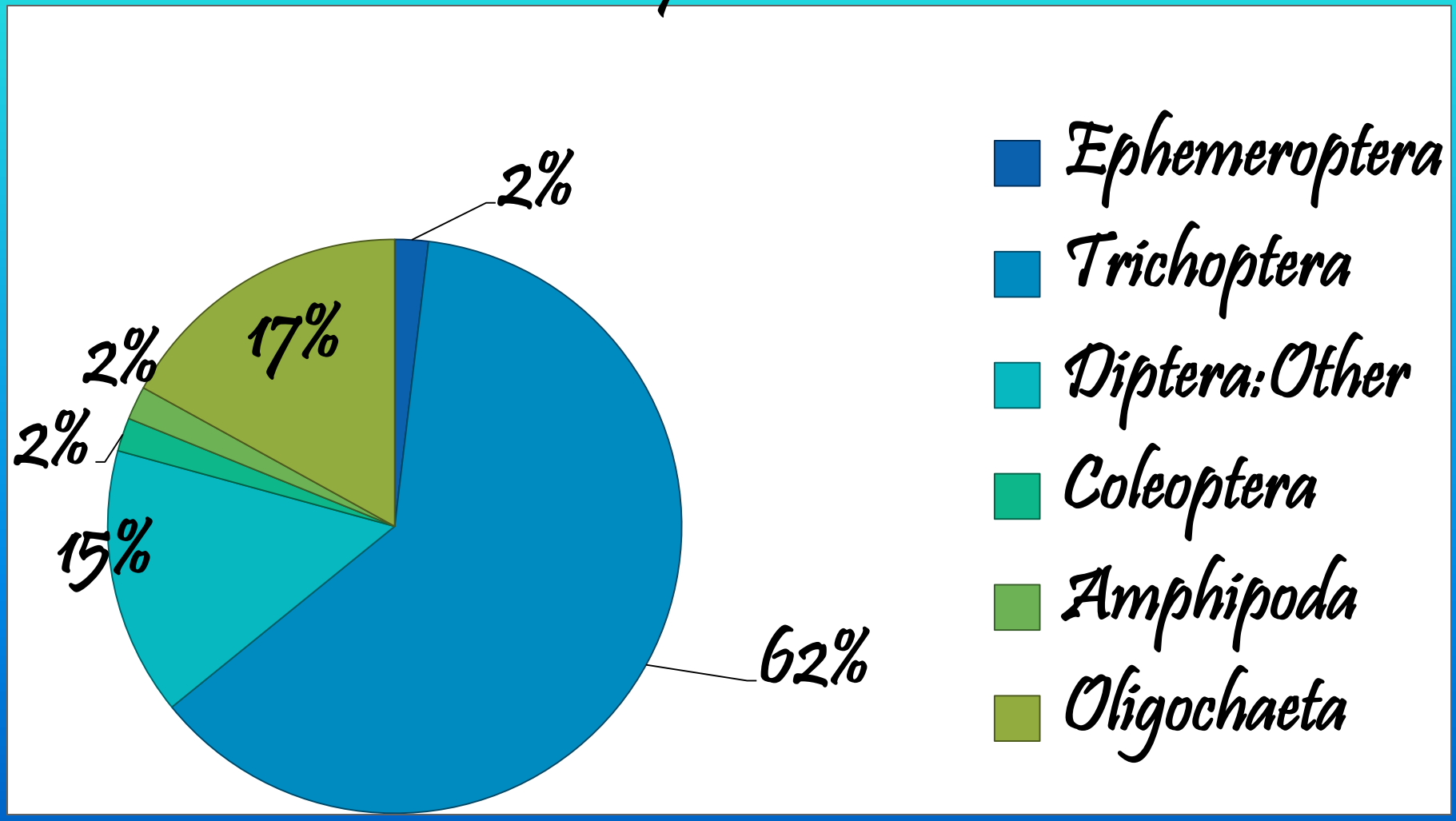
Macroinvertebrate Sampling

- 2 sites
- Fast/slow flow combined at each site
- Entire sample of each site identified

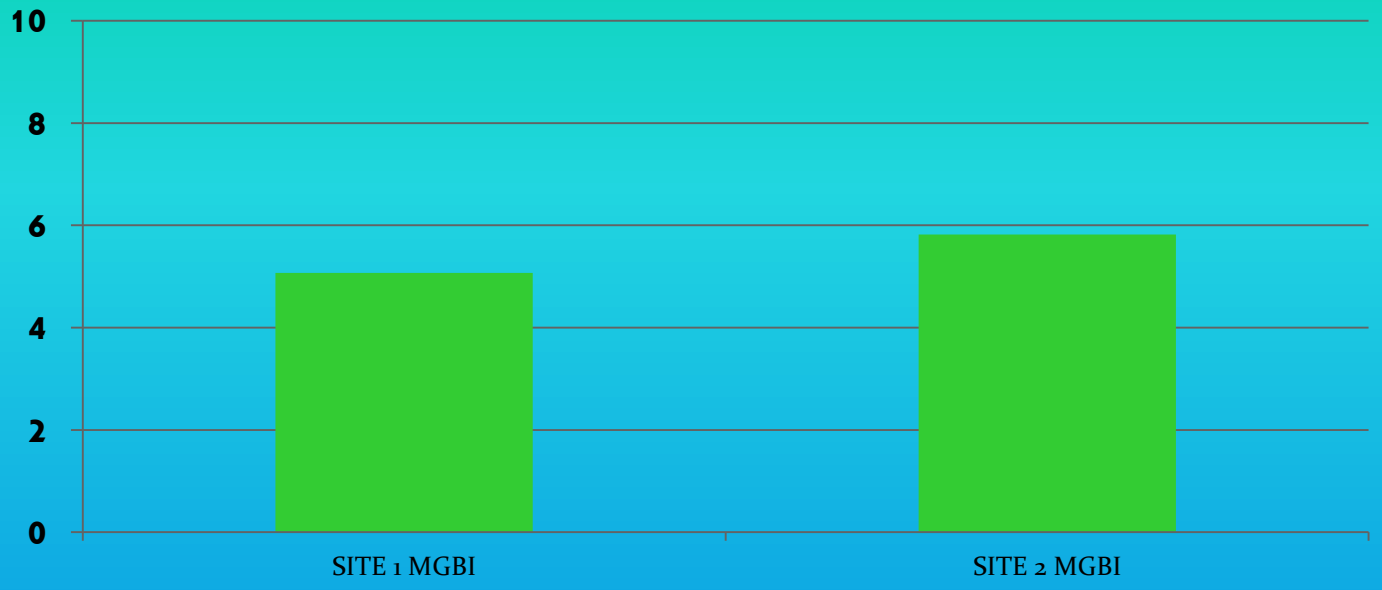
Site 1
Trout Brook Brockton, MA
10/17/2011



Site 2
Trout Brook Brockton, MA
10/17/2011



MGBI(major group biotic index)



Biotic Index Score Range	Water Quality
0-3.75	Excellent
3.76-4.25	Very Good
4.26-5.00	Good
5.01-5.75	Fair
5.76-6.5	Fairly-Poor
6.51-7.25	Poor
7.26-10.00	Very Poor

Functional Feeding Group

Scrapers Collectors

Shredders Predators

Site 1			Site 2	
Trichoptera	Collector-filterer		Trichoptera	Collector-filterer
Oligochaeta	Collector-gatherer		Oligochaeta	Collector-gatherer
Amphipoda	Several Feeding Groups		Diptera	Collector-filterer

Oligochaeta

- 170 species of freshwater worms
- Oligochaeta means “long hair”
- Inhabit silt and mud
- Collector gatherers
- Red worms are pollution tolerant
- Able to live in water with low oxygen

Diptera

- “True Flies”
- 17, 000 species
- Aquatic in larvae stage
- 3,500 Aquatic species
- One proleg on thorax
- Diptera means “double wings”

Trichoptera

- Most Plentiful in Trout Brook
- Common name: Caddisfly
- 149 species
- Shredders, collectors and scrapers

Family: Hydropsychidae

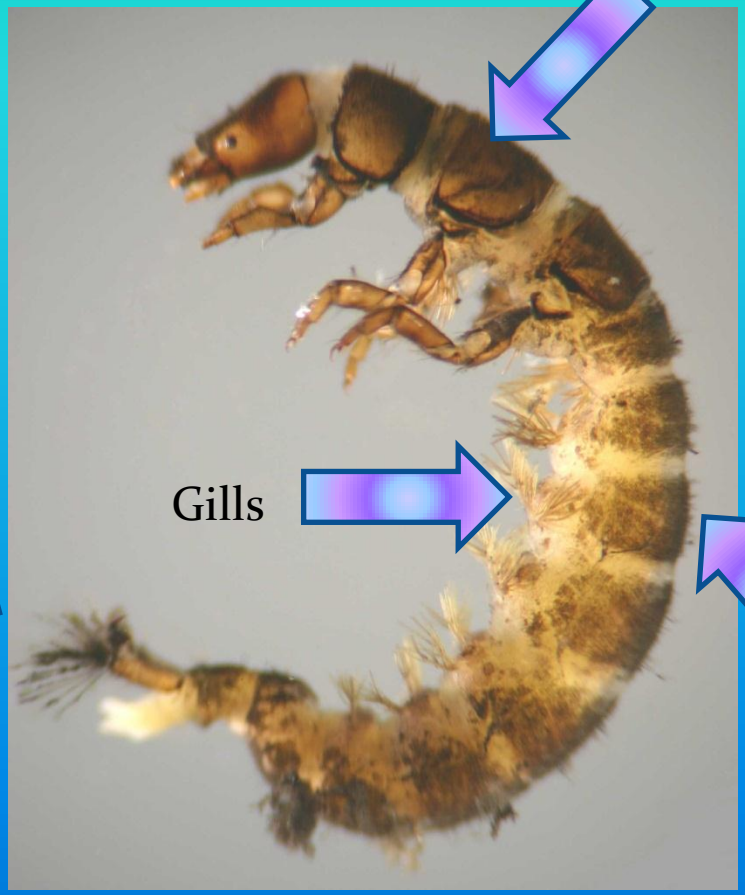


Image from www.chdiagnostic.com

Trout Brook Water Quality Study Summary

- *Minimum suggested Macroinvertebrate sample size=200.*
  - Trout Brook Site 1 sample size = 71
  - Trout Brook Site 2 sample size = 53

Major Group Biotic Index

- Trout Brook Site 1= 5.070423
- Trout Brook Site 2= 5.818182

Diversity of Functional Feeding Groups

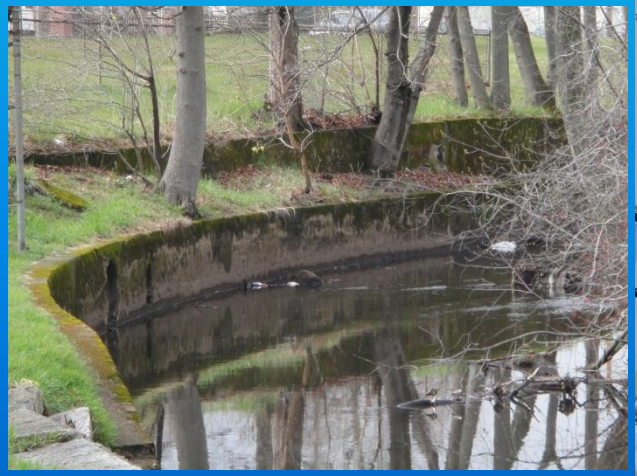
- Dominated by Collector Feeding Groups

Physical Observations

- Little/No Riparian Zone
- Pollutants observed

What next?

- Placement of Bug Nets
- Continue monitoring of Trout Brook in Fall 2012
- Research repairing/building of Riparian Zone
- Letter Writing to City of Brockton



Acknowledgements

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